



*city of*  
**Ankeny**

*bringing it all together*

# WELCOME

## ANKENY AREA CONTRACTORS

Thank you for being here  
today!

# PLANNING, BUILDING, DEVELOPMENT ENGINEERING & STORM WATER PERSONNEL

- Carmen Santee, Permits Clerk
- Debbie Schaffer, Permits Clerk
- Kathy Dozler, Permits Specialist
- Michael Villamagna, Combination Inspector I
- Craig Larsen, Combination Inspector II
- Jerry Agan, Combination Inspector III
- John Cabeen, Code Enforcement Officer II
- Dennis Neff, Civil Engineering Technician
- Don Clark, Civil Engineer
- Jon Hanson, Development Engineering Administrator
- Jeff Junker, Building & Zoning Administrator
- Eric Carstens, Associate Planner
- Julie Gould, Associate Planner
- Debra Gervais, Associate Planner
- Eric Jensen, Director of Planning & Building
- Jared Bright, Storm Water Coordinator
- Shawn Buckner, Water Administrator

# PERMIT FEE SCHEDULE

- Building permit fees are anticipated to be reviewed for increase
  - There has been no average cost per square foot valuation increase since 2009
  - There has been no fee table increase since 2006
- Trades' permit fees are anticipated to be reviewed for increase
- Builders – we currently charge no plan review or handling fee at this time
  - changing house plans after permitting and before construction starts will afford no more than an 80% building permit fee refund

# PERMIT HOLDERS YOU ARE RESPONSIBLE FOR YOUR PROJECTS

- **175.13 SUBSECTIONS 105.6.1 AND R105.6.1 ADDITION - - REVOCATION OF PERMIT.** Subsections 105.6.1 Revocation of Permit, of the IBC and R105.6.1, Revocation of Permit, of the IRC, are hereby established by adding the following subsections:
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- Subsections 105.6.1 and R105.6.1 Revocation of Permit It is the responsibility of the permit holder to schedule the required inspections and obtain final approval. Failure to schedule the required inspections and receive approval of work authorized by the permit before covering said work or at completion shall result in revocation of the permit and void any associated approvals granted by the City. This failure shall also equate to working without a permit in violation of City ordinance and no future permits shall be issued to any person or company who has outstanding violations of this code or any other laws or ordinances of the City. Failure to contact the City for any inspection or follow-up prior to expiration of a permit shall be deemed a violation of this code section. Failure to contact the City for any inspection or follow-up prior to expiration of a Temporary Certificate of Occupancy shall also be deemed a violation of this code section. Allowing occupancy of a structure, for which a person or company holds a building permit, prior to or without a valid Certificate of Occupancy (temporary or final) shall be deemed a violation of this code section and no future permits shall be issued to any person or company who has outstanding violations of this code or any other laws or ordinances of the City.

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# ONGOING ISSUES

USE OF WATER –  
LEGAL and ILLEGAL



# WATER METERS & USE

- Water meters are used to encourage the conservation of water and the equitable distribution of charges for water service among customers.
- Using unmetered water is asking every other customer to pay for your water use!

# PERMIT HOLDERS YOU ARE RESPONSIBLE FOR YOUR PROJECTS

- City of Ankeny Ordinance #1758
- Covers lawful use of water and describes fines in detail
  - General Contractors/Builders/Permit Holders, it's your building permit. As the responsible party for your projects we will hold you responsible. The actions of your subs may affect you directly.
    - Someone will face this new ordinance and fine schedule. Don't let it be you!

# WATER USE

- Illegal Activities
  - Operation of a hydrant
  - Operation of a curb stop shutoff valve
  - Tampering with a water meter
  - Illegal use of water

# WATER USE WITHOUT PROPER METERING

Ord. 1719 Section 90.19

Fire Hydrants

- Use of a fire hydrant without authorization
  - Fines
    - \$750 first offense
    - \$1,000 subsequent offense(s)

# WATER USE

Ord. 1719 Section 90.21

## Curb Box Shutoff

- Unauthorized operation of a curb box shutoff valve
  - Fines
    - \$250 first offense
    - \$500 subsequent offense(s)

# WATER USE

Ord. 1719 Section 90.22 #5

## Meter Tampering

- Tampering with a meter
  - Fines
    - \$750 first offense
    - \$1,000 subsequent offense(s)

# WATER USE WITHOUT PROPER METERING

Ord. 1719 Section 91.12 #1

## Illegal Uses

- Trench settling
  - Sod/seed watering
  - Landscape watering
  - Compaction
- Fines
    - \$750 first offense
    - \$1,000 subsequent offense(s)

# PERMIT HOLDERS YOU ARE RESPONSIBLE FOR YOUR PROJECTS

- City of Ankeny Ordinance #1758
  - 90.23 PENALTIES
    - Operation of a curb stop shutoff valve is subject to a \$250 penalty for the first offense and \$500 for each repeat offense.
    - Operation of a hydrant is subject to a \$750 penalty for the first offense and \$1,000 for each repeat offense.
    - Illegal use of water is subject to a \$750 penalty for the first offense and \$1,000 for each repeat offense.
    - Tampering with a water meter is subject to a \$750 penalty for the first offense and \$1,000 for each repeat offense.



# PERMIT HOLDERS YOU ARE RESPONSIBLE FOR YOUR PROJECTS

- City of Ankeny Ordinance #1758

Penalties are assessed through the Clerk of Court, much like a speeding ticket.

You will have choices:

1) plead guilty and pay the fine

-or-

2) have your day in court

Again, someone will face this new ordinance and fine schedule. Don't let it be you!

# WATER USES - WHAT IS THE SOLUTION?

- Obtain the proper paperwork and meter from Shawn Buckner, Ankeny Water Supervisor, for the following uses:
  - Trench settling
  - Sod/seed watering
  - Landscape watering
    - Compaction
  - Use of a fire hydrant

# IDNR UPDATES TO STORMWATER REQUIREMENTS

- In October of 2012, The Iowa Department of Natural Resources adopted new General Permit #2 requirements related to construction sites. One of the changes from the previous permit is the requirement to preserve topsoil on construction sites.

# IDNR UPDATES TO STORMWATER REQUIREMENTS

- The requirement to preserve topsoil means that at the end of the project, all open areas of the site (not covered by buildings, paving or rock surfacing) that were disturbed by construction, must have a minimum 4" layer of topsoil in place to support your final stabilizing vegetation.

# IDNR UPDATES TO STORMWATER REQUIREMENTS

- A minimum of 2 soil tests for every acre disturbed by construction is required.
- This would be provided as part of the punch list/walk through process on a residential plat.

# IDNR UPDATES TO STORMWATER REQUIREMENTS

- If a development has less than 4" of topsoil to begin with, documentation of that is needed (from an independent 3<sup>rd</sup> party such as a soil testing company) prior to grading operations to allow for less than the 4" at plat approval.
- If you don't have the pre-construction documentation, then you must provide the 4" minimum topsoil layer.

# IDNR UPDATES TO STORMWATER REQUIREMENTS

- If builders place sod, credit can be taken for up to one inch of topsoil that comes attached to the sod.
- Verification of the existence of the required amount of topsoil shall occur prior to sodding or seeding by coordinating an inspection through the building inspection line as you would any other inspection.

# IDNR UPDATES TO STORMWATER REQUIREMENTS

- Prior to issuance of a final CO for an individual residence, 2 soil tests will be completed by City of Ankeny staff prior to final stabilization of the lot. This will need to be coordinated with City staff as all other inspections are coordinated.



# CURRENT ANKENY CONSTRUCTION CODES

- Ankeny Municipal Code
- SUDAS
- 2009 International Residential Code
- 2009 International Building Code
- 2009 International Fire Code
- 2009 International Mechanical Code
- 2009 Uniform Plumbing Code
- 2009 International Energy Conservation Code
- 2009 International Property Maintenance Code
- 2011 National Electric Code

**ONGOING ISSUES**

**PERMIT SUBMITTAL  
RELATED**

# Completeness of Permit Applications

- Please be sure your applications for building, plumbing, mechanical or electrical permits are as **complete and accurate**.
- This information becomes part of the permanent property record.
- While it is not our responsibility to complete this form for you - we are glad to help.

# Checklist for a Complete Application

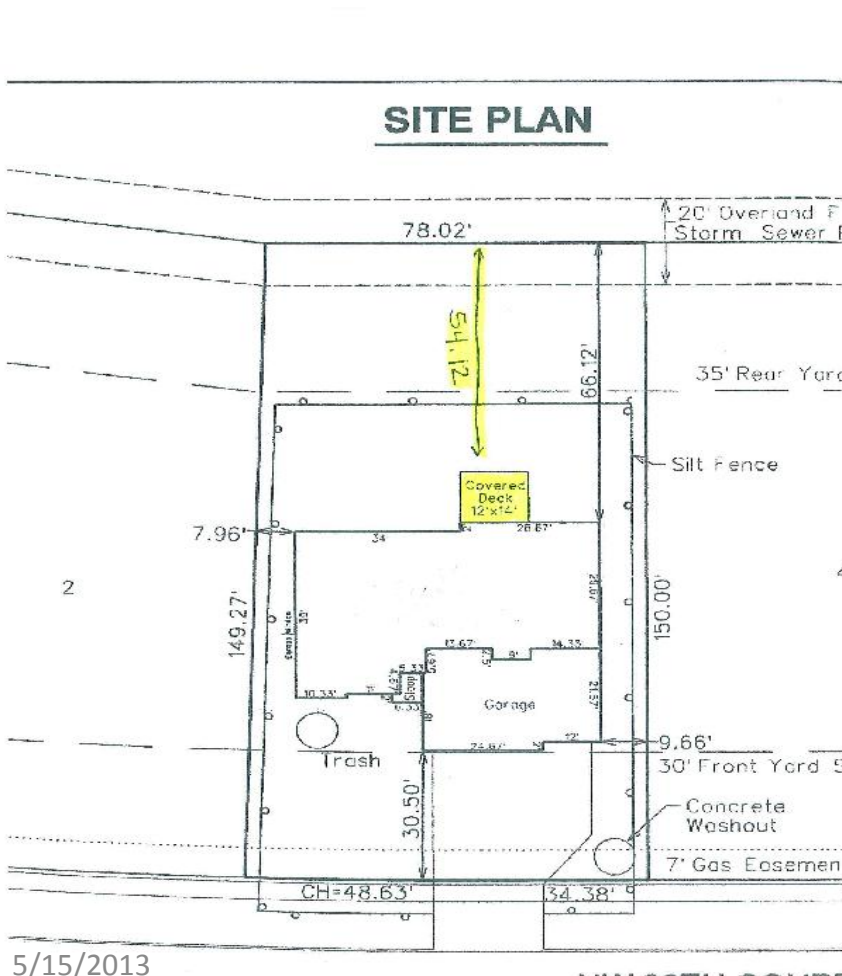
- ✓ **Complete and Accurate** Application Form
- ✓ Complete Construction Plans
- ✓ Site Plan Showing Easements
- ✓ Site Plans Showing **Actual** Setbacks
- ✓ Manual 'D' and 'J' Documentation
- ✓ REM/Rate if using performance path
- ✓ REScheck if using tradeoff approach
- ✓ COSESCO/Site Erosion Control Plan
- ✓ Special Forms (Flood Plain or MPE)

# Completeness of Permit Applications

- Application submittals are not acceptable unless compliance with all submittal requirements is met.
- Application submittals that are incomplete or inaccurate will be returned to the applicant without further review.

# Site Plan – Setbacks and Covered Decks/Porches/Stoops

- Setbacks for covered decks/porches/stoops are the same as for the principal structure
- May not encroach into the required setback



# Site Plan – Setbacks and Covered Decks/Porches/Stoops

Required rear yard setback



04.24.2013 10:12

# ONGOING FIELD ISSUES

## BUILDING/CONSTRUCTION RELATED



# Field Inspection Checklist

Builders, stand  
your inspections  
-or-  
this form shall be  
posted @ framing  
stage and  
maintained  
through the final  
inspection!



## RESIDENTIAL INSPECTION RECORD

POST THIS CARD IN A CONSPICUOUS LOCATION READILY  
ACCESSIBLE TO THE BUILDING INSPECTOR

JOB ADDRESS: \_\_\_\_\_

FOR INSPECTIONS CALL (515) 963-3533  
(24 Hour Notice Required)

### COVER NO WORK BEFORE INSPECTION & APPROVAL

Contractor Initials	Completed Date	Required Inspection	Approval Date	Inspector Initials
		Plumbing Rough-In		
		Electrical Rough-In		
		Mechanical Rough-In & Gas		
ABOVE MUST BE APPROVED PRIOR TO FRAMING INSPECTION				
		Framing		
NO INSULATION OR DRYWALL UNTIL THE ABOVE HAS BEEN APPROVED				
		Sidewalk/Approach		
POUR NO CONCRETE UNTIL THE ABOVE HAS BEEN APPROVED				
		Plumbing Final		
		Electrical Final		
		Mechanical & Gas Final		
		Building & Site Final		

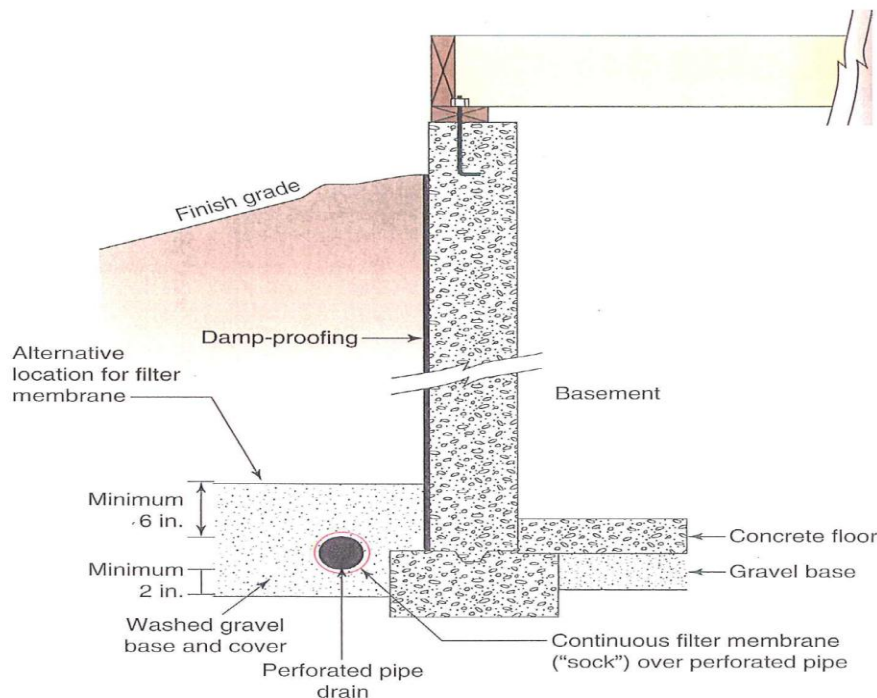
Date	Correction Required	Approval Date	Inspector Initials

# Field Inspection Checklist

- Rough-in Inspections
  - Sub-contractors sign off and date when rough-ins are complete
  - General contractor/permit holder – confirm sub's rough-ins are complete then call for ALL rough-in inspections as well as framing inspection –BEFORE-insulation or rock
    - **ONE STOP FOR ROUGH-INS & FRAMING INSPECTIONS**
- Final Inspections
  - Sub-contractors sign off and date when final installation is complete
  - General Contractor/permit holder – call for final after confirming ALL work is complete
    - COMMUNICATE, COMMUNICATE, COMMUNICATE

# Code Items Needing Your Attention

## Foundation Drainage Tile



Filter membrane required for perforated pipe foundation drain.

**FOUNDATION DRAINAGE**

Perforated drains shall be surrounded with an approved filter membrane or the filter membrane shall cover the washed gravel or crushed rock covering the drain. Drainage tiles or perforated pipe shall be placed on a minimum of 2 inches (51 mm) of washed gravel or crushed rock at least one sieve size larger than the tile joint opening or perforation and covered with not less than 6 inches (152 mm) of the same material.

# Code Items Needing Your Attention

## Sill Plate Anchorage

- R403.1.6 Foundation Anchorage
  - Bolts shall be at least 1/2" diameter
  - Bolts shall extend a minimum of 7" into concrete
  - Bolts shall be spaced a maximum of 6' on-center
  - There shall be a minimum of 2 bolts per plate section
  - Bolts shall be located not more than 12" and not less than 7 bolt diameters from the end of the plate section
  - A nut and washer shall be tightened on each anchor bolt
  - Strap anchors may be used if installed in accordance with the manufacturer's listing and installation standards
- These general provisions do not apply to narrow wall bracing

# Code Items Needing Your Attention

## Foundation Straps

- Not allowed for narrow bracing anchorage
- MUST be installed per installation standards
- Improper installation will require an 'engineered-fix'!



# Code Items Needing Your Attention

## Exterior and Bearing Walls

- Studs may be cut or notched as follows:
  - Not to exceed 25% of stud width
- Studs may be bored or drilled as follows:
  - Hole is not greater than 40% of stud width
  - Hole shall not be closer than 5/8" to edge of stud

### Exceptions:

- Studs may be bored not to exceed 60% of stud width provided the studs are doubled and not more than two successive studs are bored.

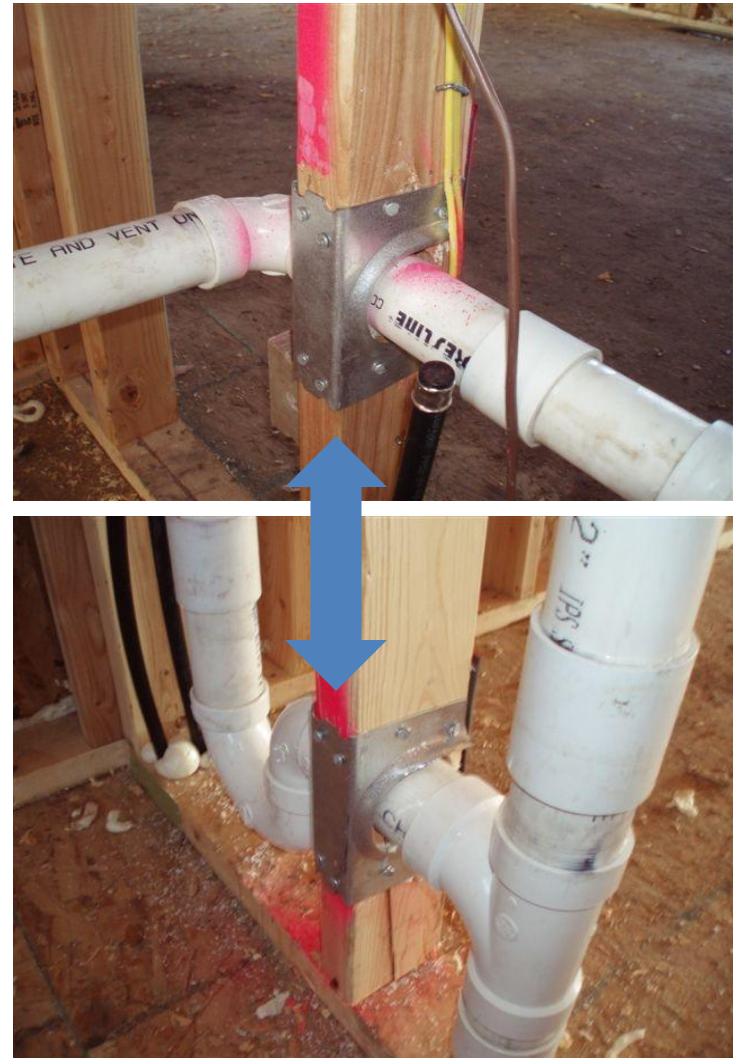


# Code Items Needing Your Attention

## Exterior and Bearing Walls

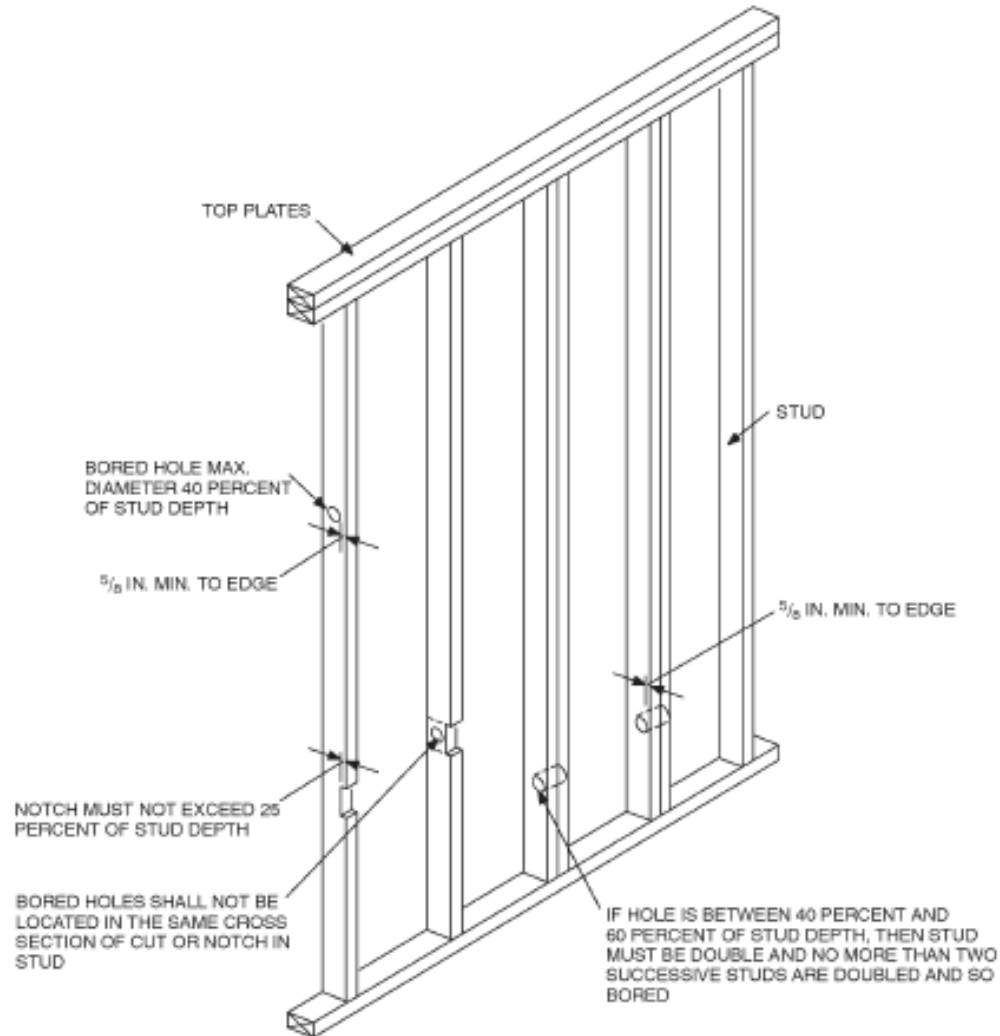
- Exception:

Use of approved stud shoes is permitted when they are installed in accordance with the manufacturer's recommendations.



# Code Items Needing Your Attention

## Exterior and Bearing Walls





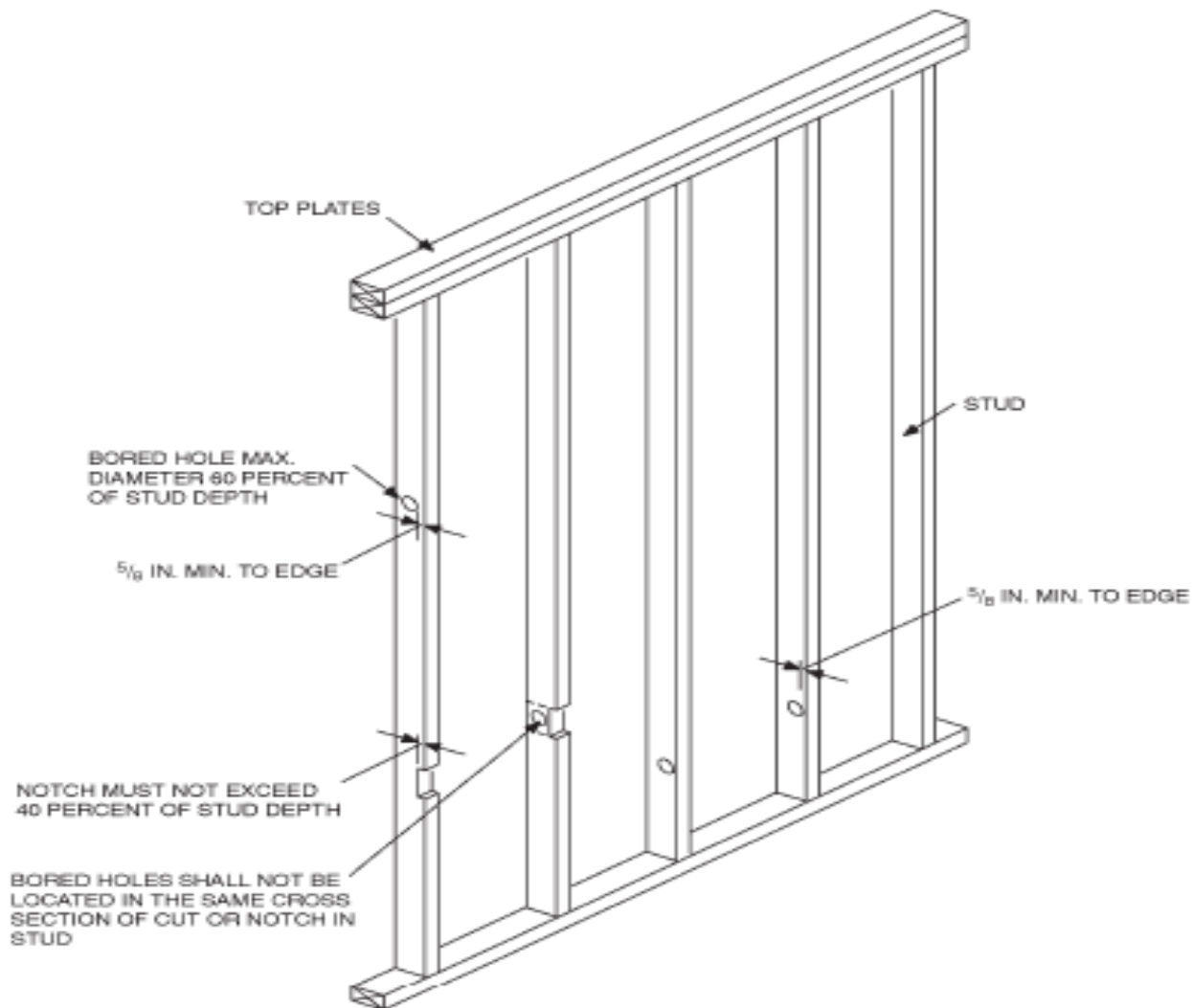
# Code Items Needing Your Attention

## Interior Non-bearing Walls

- Studs may be cut or notched as follows:
  - Not to exceed 40% of stud width
- Studs may be bored or drilled as follows:
  - Hole is not greater than 60% of stud width
  - Hole shall not be closer than 5/8" to edge of stud

# Code Items Needing Your Attention

## Interior Walls



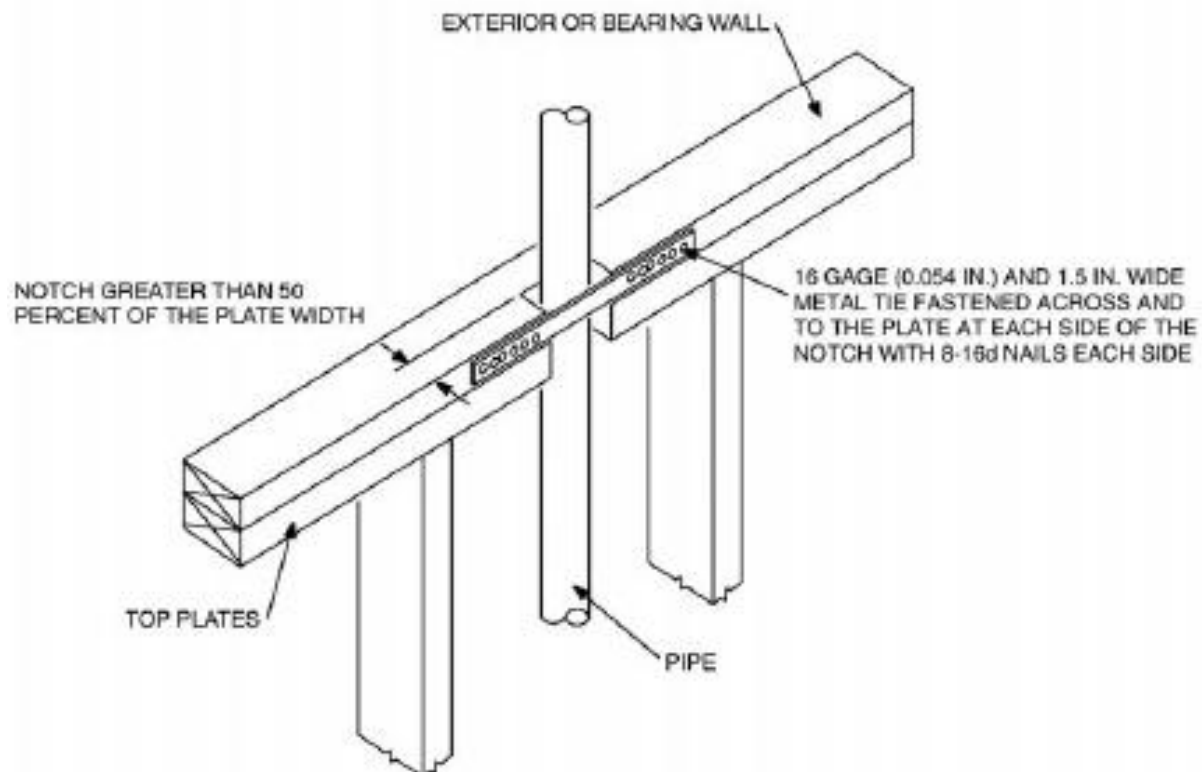
# Code Items Needing Your Attention

## Drilling and Notching of Top Plates

- Plates cut, drilled or notched more than 50% of their width shall be repaired as follows:
  - Install 16 gauge, 1 ½” wide strap to top plate
  - Secure with not less than eight 16d nails at each side

# Code Items Needing Your Attention

## Top Plates



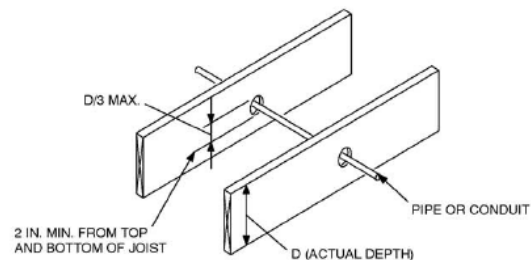
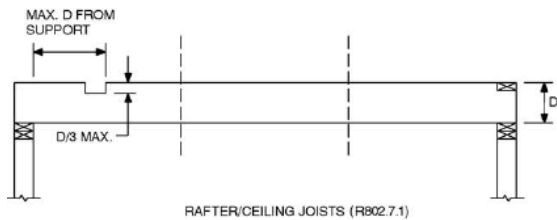
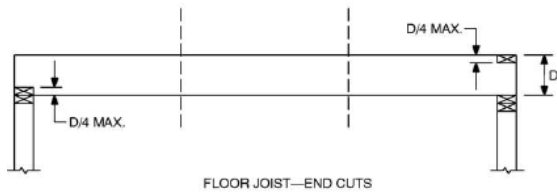
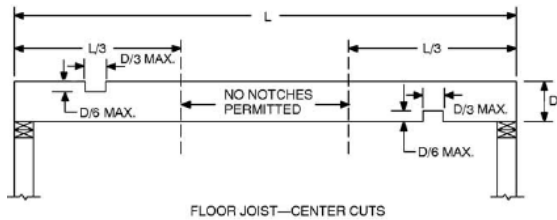
# Code Items Needing Your Attention

## Dimensional Floor Joists

- Notches shall not:
  - Exceed one-sixth of the member depth
  - Be longer than one-third of the member length
  - Be located in middle one-third of span
- Notches at ends of the member shall not:
  - Exceed one-fourth the member depth
- Holes shall not:
  - Exceed one-third the member depth (diameter)
  - Be closer than 2 inches to top or bottom of member
  - Be closer than 2 inches any other hole
  - Be closer than 2 inches to any notch

# Code Items Needing Your Attention

## Dimensional Floor Joists



5/15/2013

FIGURE R502.8  
CUTTING, NOTCHING AND DRILLING

# Code Items Needing Your Attention

## Dimensional Ceiling Joists

- Notches shall not:
  - Exceed one-sixth of member the depth
  - Be longer than one-third of the member depth
  - Be located in middle one-third of span
- Notches at ends of member shall not:
  - Exceed one-fourth the member depth
- Holes shall not:
  - Exceed one-third the member depth (diameter)
  - Be closer than 2 inches to the top or bottom of member
  - Be closer than 2 inches to any other hole
  - Be closer than 2 inches to any notch

# ONGOING FIELD ISSUES

## STORM WATER RELATED



# COSESCO – Erosion Control Plan

- Jared Bright
- Storm Water Coordinator
- 963-3534
- [www.ankenyiowa.gov](http://www.ankenyiowa.gov)
  - Municipal Utilities
  - Stormwater Utility

For City Use:  
Permit No. Issued \_\_\_\_\_  
Date Issued \_\_\_\_\_

**Construction Site Erosion and Sediment Control (COSESCO)**  
**Information to be Submitted with Building Permit Application**

Site Street Address: \_\_\_\_\_

**Part A. Choose one:**

☐ the above address is covered under the State General Permit #2 as a part of the larger development of \_\_\_\_\_ (plat)

☐ I have obtained State General Permit #2 coverage for this address as required by the developer.

**Part B. Choose one:**

☐ I am the permittee of the development/plat referenced above.

☐ I have accepted a transfer of liability and am solely responsible for General Permit #2 compliance on my site.

☐ I have not accepted a transfer of liability. The responsible party is \_\_\_\_\_

**Part C. Choose one:**

☐ I am submitting a Stormwater Pollution Prevention Plan (SWPPP) for this site (if developer requires that the builder obtain their own State General Permit #2).

☐ I am submitting a site plan with erosion controls shown and this form.

**Part D. COSESCO Contact Information:**

Applicant name \_\_\_\_\_

Applicant e-mail \_\_\_\_\_

Applicant address \_\_\_\_\_

Applicant phone \_\_\_\_\_

Applicant Signature \_\_\_\_\_ Date \_\_\_\_\_

As it relates to storm water controls and lot protection the following processes must be followed in order to secure a building permit and to continue work uninterrupted. (see attachments/enclosures)

**INSTALLATION OF EROSION CONTROL MEASURES, INCLUDING A CONCRETE WASHOUT AREA AND SITE CONTROL FENCING WHEN ADJACENT TO A DEVELOPED LOT MUST BE IN PLACE PRIOR AT THE TIME OF PERMIT APPLICATION SUBMITTAL.**

**Building Permit Approval Procedure:**

- Submission of:
  - Complete application
  - Building plans
  - Site plan
  - Energy Affidavit
  - COSESCO documentation and site plan showing location of erosion control measures, temporary rock drive, concrete washout area and adjacent developed lot fencing
- **A building permit will not be issued authorizing any construction to proceed unless and until all of the above are in place.**

**Temporary rock/all weather access:**

- Within seven (7) days of foundation installation -and/or- within three (3) days of sewer/water/storm installation a temporary rock/all weather surface site access shall be installed. Access on and off the site shall be limited to this location
- Temporary rock/all weather access shall be a minimum of eight (8) inch depth a minimum of eight (8) feet in width within a ‘cored-out’ area extending from the back of curb to the front setback line and shall consist of aggregate/material of 1” and larger size and shall be predominantly free of fines.

**Interim Inspections**

- At any time during the construction of a project Planning and Building Department personnel and Storm Water personnel will perform inspections to ensure that adjacent lot protection and storm water control features are present and functional.

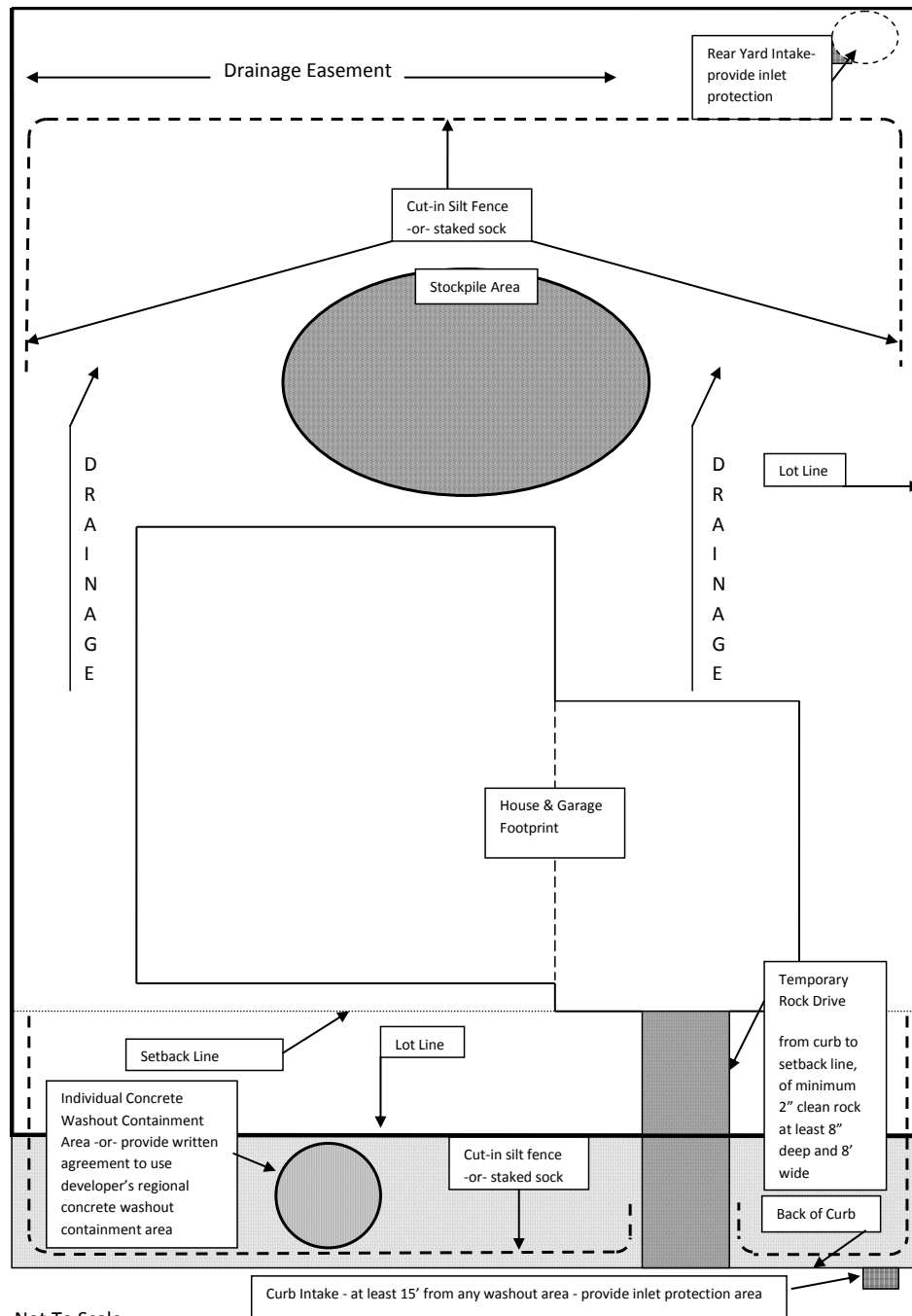
**Final Stabilization Inspection - Certificates of Occupancy**

- Fully sodded/fully vegetated lots may be issued a final Certificate of Occupancy if all other aspects of the project have been inspected and approved
- Lots that are not sodded/fully vegetated may be issued a temporary Certificate of Occupancy with a maximum twenty one (21) day timeframe. These lots shall maintain in-place erosion control features until lot is sodded/fully vegetated.
- Exception: cold weather months, depending on weather condition, of November through April may be issued a temporary Certificate of Occupancy. Regardless of weather conditions, these lots shall maintain in-place erosion control features until lot is sodded/fully vegetated.

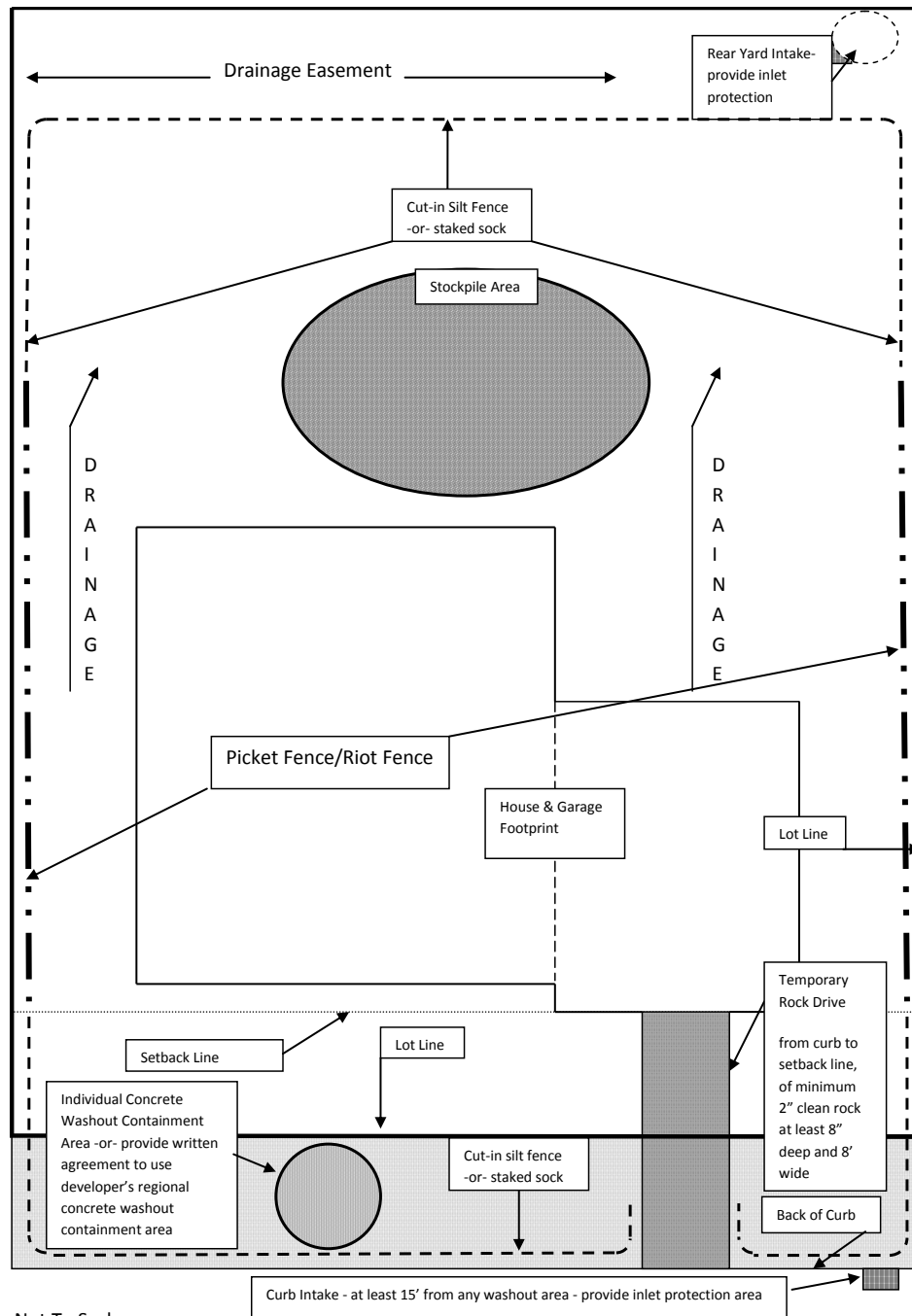
**At any time upon a finding of non-compliance a Stop Work Order will be posted and a pre-citation will be issued to the builder with a one (1) day timeframe for obtaining compliance (weather permitting). If compliance is not obtained within one (1) day a citation will be issued for that day of non-compliance and each day thereafter. The initial day of non-compliance carries a penalty of seven hundred fifty (\$750) dollars and each subsequent day thereafter carries a penalty of one thousand (\$1000) dollars.**

# STORMWATER – EROSION CONTROL PRACTICES – YOUR CONTINUED HELP IS NEEDED

Your  
sites  
should  
look  
like  
this



# Your sites should look like this



# Perimeter Controls

- **At the time of building permit application submittal and prior to any dirt moving activities perimeter erosion control measures shall be installed.**
- Prior to or upon submission of a permit application be certain that that the perimeter erosion control measures are in-place.
- **Building permit applications include this requirement and builders are responsible for these installations prior to any dirt moving activities.**

# Items Needing Your Attention

## Perimeter Controls



- Lots shall be 'contained' so as to prevent runoff and track-off. Place controls along street.

# Items Needing Your Attention

## Perimeter Controls



- Lots shall be ‘contained’ so as to prevent runoff. Place controls on the downhill sides of lots.



# Items Needing Your Attention

## Perimeter Controls



- Lots shall be 'contained' so as to prevent runoff. Place controls along any adjacent watercourse.



# Items Needing Your Attention

## Temporary Site Access



- Lots shall be contained so as to prevent track-off.
- It is suggested that the temporary site access – rock drive area be located where the permanent drive is to be installed and that it be cored-out to accommodate the depth of granular material.
- Use of the temporary site access – rock drive aggregate as a subgrade for the permanent driveway makes good sense.

# Items Needing Your Attention

## Temporary Site Access



A temporary site access - rock drive shall be installed within 7 business days of foundation installation or within 3 business days of sewer/water/storm installation whichever occurs first. The driveway shall be constructed to a minimum width of 8 feet and shall extend from the back of curb to the front setback line. Aggregate shall be large enough to carry all loads and shall be a minimum of 8 inches deep. **LARGE ROCK** is strongly recommended!

# Items Needing Your Attention

## Maintenance of Controls

Interim inspections may occur at any time during construction. A finding of non-compliance will be cause for immediate posting of a Stop Work order.



Within 24 hours a compliant installation shall be confirmed or a citation may be issued.



# Items Needing Your Attention

## Maintenance of Controls



- 
- Ongoing maintenance is required.
  - If this continues, anticipate cut-in silt fence around the entire perimeter to become mandatory.
- 

# INTERIM INSPECTIONS

## STOP WORK

City of Ankeny  
Office of Building Official

### NOTICE

**Address:** \_\_\_\_\_

This property has been inspected and Construction Site Erosion and Sediment Control features are found to be non-compliant. Corrective action shall be taken immediately to remedy this state of non-compliance. No other work shall be allowed on this site until approval of corrective action is granted. **Ankeny Municipal Code Chapter 169**

*Jeff Anderson*

\_\_\_\_\_  
Building Official

\_\_\_\_\_  
Date

When corrections are complete call Jared Bright,  
Storm Water Coordinator for re-inspection @  
515-963-3534.

**Do not remove this notice under penalty of law.**

Interim inspections may occur at any time during construction. A finding of non-compliance will be cause for immediate posting of a Stop Work order by City personnel.

Within 24 hours a compliant installation shall be confirmed or a citation may be issued.

Do not expect a phone call or email. This is your responsibility.

**ONGOING FIELD ISSUES**

**DEVELOPMENT  
ENGINEERING RELATED**

# Items Needing Your Attention

## Infrastructure and Installations

- Development Engineering is looking at infrastructure for all projects. Issues with these items may preclude CO approvals.
- Questions?
- call 963-3550 or the building inspection line @ 963-3533 and ask for help from Development Engineering.

# Items Needing Your Attention

## Manholes and Installations

- Proper sealing is required.





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# Items Needing Your Attention

## Manholes and Installations

- Proper sealing is required.





# Items Needing Your Attention

## Manholes and Installations

- Proper alignment is required.



# Items Needing Your Attention

## Curb Stop Caps and Installations

- Proper installation includes the correct cap (w/5 sided nut in center) and cast into the concrete



# Items Needing Your Attention

## Curb Stop Caps and Installations

- Proper installation includes the correct cap (w/5 sided nut in center)and cast into the concrete





# Items Needing Your Attention

## Curb Stop Caps and Installations

- Proper installation DOES NOT include sleeving



# Items Needing Your Attention

## Curb Stop Caps and Installations

- Proper installation DOES NOT include the wrong cap nor sleeving





# Items Needing Your Attention

## Intakes in Driveway Installations

- Compliant installation includes proper frame, casting, grates and configuration.



# Items Needing Your Attention

## Intakes in Driveway Installations

- Compliant installation includes proper frame, casting, grates and configuration.



# Items Needing Your Attention

## Intakes in Driveway Installations

- Proper installation DOES NOT include improper frame, casting, grates and configuration.



# Items Needing Your Attention

## Intakes in Driveway Installations

- Proper installation DOES NOT include improper frame, casting, grates and configuration.





# Items Needing Your Attention

## Sidewalk Drops

- Call for an inspection before you pour!
- These must be ADA compliant!
  - This will be too steep.



# Items Needing Your Attention

## Sidewalks' & Trails' Locations

- Corner Lots and Through Lots have more than one street frontage. A sidewalk or trail is required along all streets.
- A sidewalk at a minimum is required along all streets and an eight foot trail may be required.
- Sidewalks are required along streets and the plat may stipulate a trail. Know and understand the requirements of the area in which you are working.
  - Please make the call before you request a final inspection if you are unsure or have questions.

# Items Needing Your Attention

## Sidewalks' & Trails' Locations

### Corner Lot Walk



### Through Lot Trail



# Items Needing Your Attention

## Manholes and Installations

- Development Engineering is looking at infrastructure for all projects. Issues with these items may preclude CO approvals.
- Questions?
- call 963-3550 or the building inspection line @ 963-3533 and ask for help from Development Engineering



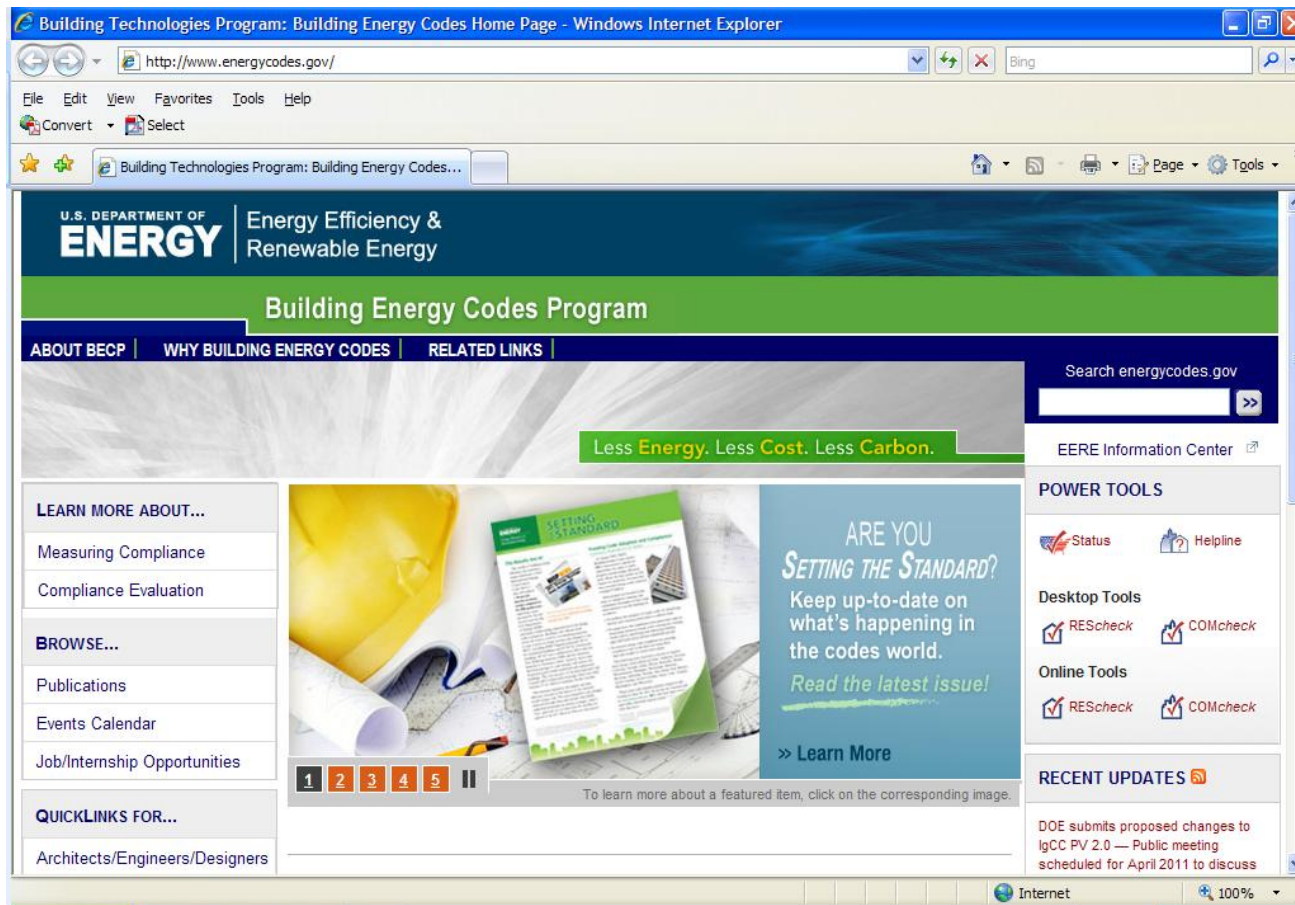
# FUTURE ANKENY CODES

Anticipate July 1, 2013 implementation

- 2012 International Residential Code
- 2012 International Building Code
- 2012 International Fire Code
- 2012 International Mechanical Code
- 2012 International Plumbing Code
- 2012 International Energy Conservation Code
  - To be implemented when required by the State of Iowa
- 2012 International Property Maintenance Code

# Energy Code Resources

# [www.energycodes.gov](http://www.energycodes.gov)



# Using the Evaluation Checklists

## COMPLIANCE APPROACHES



# Energy Compliance City of Ankeny

## CURRENT

- Performance based construction of the 2009 Energy Code - (2x4) without foam on the exterior walls is acceptable with HERS Rater:
  - Will not comply with 2012 Energy Code
- The signed HERS Raters energy audit 'takeoff' from your plans is needed when you submit your application(s).
- REM/Rate – typical reporting form
- Manual 'D' & 'J' documentation and calculation is required for permit submittals
- Thereafter the Rater confirms energy related inspections throughout the construction process
- At the end of the project the HERS Rater tests the home and provides an energy compliance certificate (assuming compliance) referencing the '09 IECC

# Energy Compliance City of Ankeny

## FUTURE - RESIDENTIAL

- Attics/ceilings - - R-49 insulation
- 2x4 exterior walls - - R-13 cavity insulation and R-5 foam on the exterior
- 2x6 exterior walls - - R-20 insulation
- Basements walls - - R-19 framing insulation -or- continuous R-15 insulation -or- R-13 framing and R-5 continuous
- Ducts in attic or in unconditioned space – minimum R-8
- Ducts in attic, outside the thermal envelope shall be tightness tested by an approved 3<sup>rd</sup> party (duct blaster test)
- A minimum of 75 percent of the lamps in permanently installed lighting fixtures shall be high-efficacy lamps

# Wood-Frame Walls

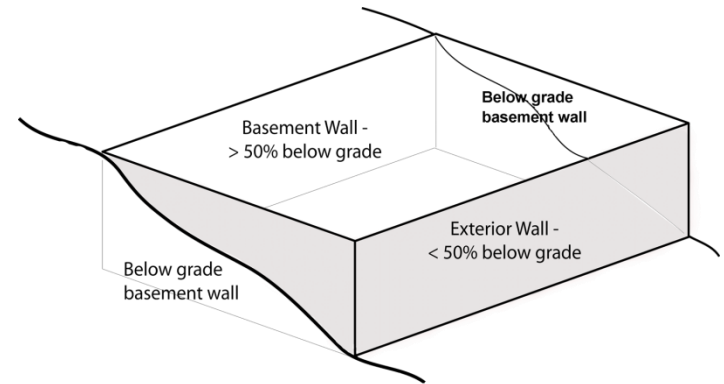
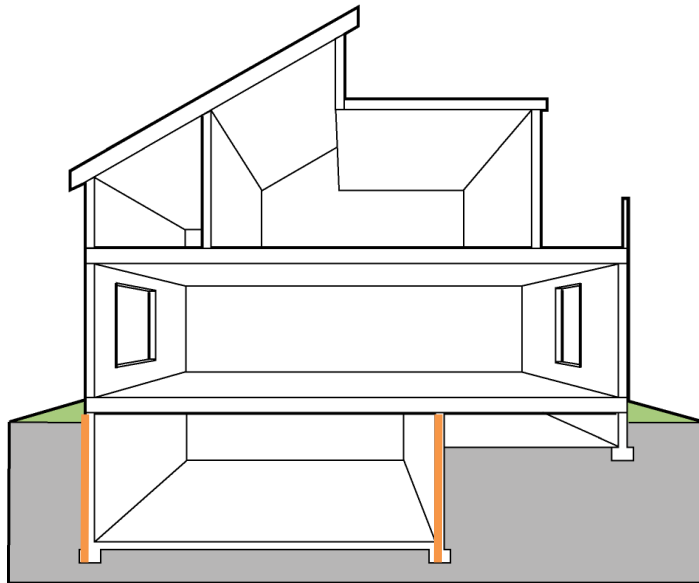
**TABLE R402.1.1  
INSULATION AND FENESTRATION REQUIREMENT**

CLIMATE ZONE	FENESTRATION U-FACTOR <sup>b</sup>	SKYLIGHT <sup>b</sup> U-FACTOR	GLAZED FENESTRATION SHGC <sup>b, c</sup>	CEILING R-VALUE	WOOD FRAME WALL R-VALUE
1	NR	0.75	0.25	30	13
2	0.40	0.65	0.25	38	13
3	0.35	0.55	0.25	38	20 or 13+5 <sup>b</sup>
4 except Marine	0.35	0.55	0.40	49	20 or 13+5 <sup>b</sup>
5 and Marine 4	0.32	0.55	NR	49	20 or 13+5 <sup>b</sup>
6	0.32	0.55	NR	49	20+5 or 13+10 <sup>b</sup>
7 and 8	0.32	0.55	NR	49	20+5 or 13+10 <sup>b</sup>

h. First value is cavity insulation, second is continuous insulation or insulated siding, so “13+5” means R-13 cavity insulation plus R-5 continuous insulation or insulated siding. If structural sheathing covers 40 percent or less of the exterior, continuous insulation R-value shall be permitted to be reduced by no more than R-3 in the locations where structural sheathing is used – to maintain a consistent total sheathing thickness.

# Basement Walls' Insulation

- ✓ Options:
- ✓ R-15 means continuous insulation (foam) inside or outside
- ✓ -OR-
- ✓ 2x6 framed walls inside with R-19 insulation
- ✓ -OR-
- ✓ Continuous R-5 (foam) inside or outside -AND- 2x4 framed walls inside with R-13 insulation



Insulated from top of basement wall down to 10 ft below grade or basement floor, whichever is less

# Energy Compliance City of Ankeny

## FUTURE - RESIDENTIAL

- No more than 3 air changes per hour and must be tested and confirmed by an approved 3<sup>rd</sup> party as applicable
- Whole house ventilation required
- Framing cavities no longer allowed as plenums – ducted HVAC systems required throughout
- Manual 'D' & 'J' documentation and calculation is required for permit submittals
- Radon mitigation should be anticipated
- Energy installation and testing documentation shall be provided and shall be posted in the electrical service panel



# Whole House Ventilation

## FUTURE - RESIDENTIAL

- **WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM.** An exhaust system, supply system, or combination thereof that is designed to mechanically exchange indoor air for outdoor air when operating continuously or through a programmed intermittent schedule to satisfy the whole-house ventilation rate.

# Whole House Ventilation

## FUTURE - RESIDENTIAL

### MINIMUM REQUIRED LOCAL EXHAUST RATES FOR ONE- AND TWO-FAMILY DWELLINGS

AREA TO BE EXHAUSTED	EXHAUST RATES
Kitchens	100 cfm intermittent or 25 cfm continuous
Bathrooms-Toilet Rooms	Mechanical exhaust of 50 cfm intermittent or 20 cfm continuous

# Energy Compliance City of Ankeny

## FUTURE - RESIDENTIAL



- Framing cavities no longer allowed as plenums.

# Energy Compliance City of Ankeny

## FUTURE - RESIDENTIAL



- Wild Returns?
- Compliant?
- Comfortable?

# Building Thermal Envelope

Two requirements to demonstrate compliance

- ✓ Whole-house pressure test

Air Leakage Rate	Climate Zone	Test Pressure
≤ 3 ACH	3-8	50 Pascals

- Testing may occur any time after creation of all building envelope penetrations
- ✓ Field verification of items listed in Table R402.4.1.1
- ✓ Testing and/or field verification of envelope requirements shall be performed by a Certified HERS Rater.

# Duct Tightness Tests

Duct tightness shall be verified by either of the following:

✓ Post construction test

- Total leakage:  $\leq 4$  cfm/per 100 ft<sup>2</sup> of conditioned floor area
  - tested at a pressure differential of 0.1 in w.g. (25Pa) across entire system, including manufacturer's air handler enclosure
- All register boots taped or otherwise sealed

✓ Rough-in test

- Total leakage  $\leq 4$  cfm/per 100 ft<sup>2</sup> of conditioned floor area
  - tested at a pressure differential of 0.1 in w.g. (25Pa) across roughed-in system, including manufacturer's air handler enclosure
  - all register boots taped or otherwise sealed
  - if air handler not installed at time of test
    - » Total air leakage  $\leq 3$  cfm/per 100 ft<sup>2</sup>

**Exceptions:** Duct tightness test is not required if the air handler and all ducts are located within building thermal envelope (not in or through the attic or other non-conditioned space)

# Mechanical System Piping Insulation

- ✓ R-3 required on
  - HVAC systems
    - Exception: Piping that conveys fluids between 55 and 105°F
- If exposed to weather,
  - protect from damage, including
    - Sunlight
    - Moisture
    - Equipment maintenance
    - Wind
  - Provide shielding from solar radiation that can cause degradation of material
  - Adhesive tape is not allowed

# Hot Water Piping Insulation

- R-3 required on
  - Piping > ¾ in. nominal diameter
  - Piping serving more than one dwelling unit
  - Piping from the water heater to kitchen outlets
  - Piping located outside the conditioned space
  - Piping from the water heater to a distribution manifold
  - Piping under a floor slab
  - Buried piping
  - Supply and return piping in recirculating systems other than demand recirculation systems
  - Piping with run lengths > maximum run lengths for nominal pipe diameter in Table R403.4.2
- All remaining piping to be at least R-3 or meet run length requirements in Table R403.4.2



*Image courtesy of Britt/Makela Group*

Pipe Diameter	3/8"	1/2"	3/4"	> 3/4"
Max Run Length	30'	20'	10'	5'



# Lighting Equipment

A minimum of 75 percent of the lamps in permanently installed lighting fixtures shall be high-efficacy lamps or 75% of permanently installed lighting fixtures to contain only high efficacy lamps

## **Exception:**

- ✓ Low-voltage lighting

Applies to interior and exterior lighting



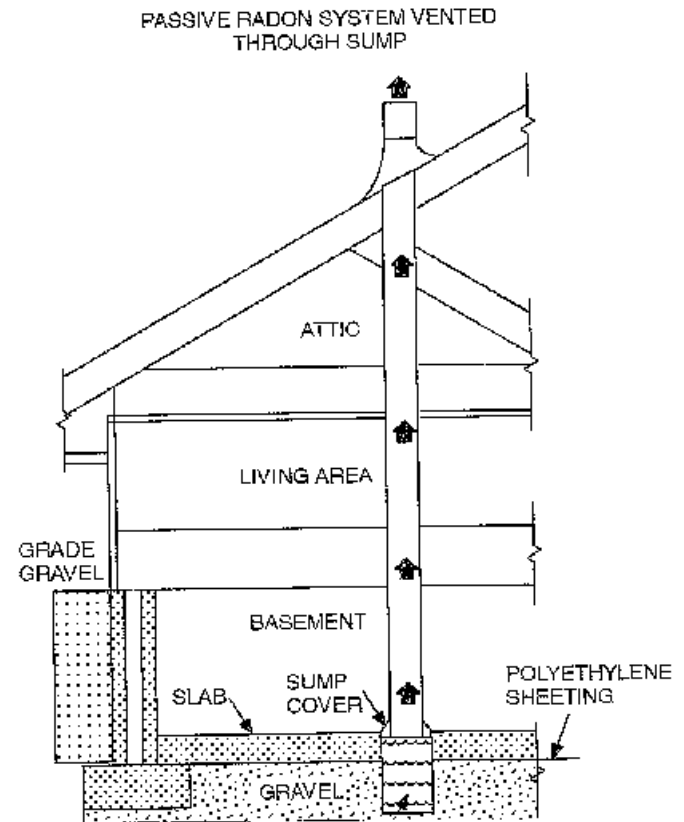
# Certificate

- ✓ Permanently posted on or in the electrical distribution panel
- ✓ Don't cover or obstruct the visibility of other required labels
- ✓ Includes the following:
  - R-values of insulation installed for the thermal building envelope, including ducts outside conditioned spaces
  - U-factors for fenestration
  - SHGC for fenestration
  - Results from any required duct system and building envelope air leakage testing
  - HVAC efficiencies and types
  - SWH equipment

# Energy Compliance City of Ankeny

## FUTURE - RESIDENTIAL

- Radon mitigation should be anticipated



# Vapor Retarder under Basement Slabs and Slab-On-Grade Floors – No Radon Mitigation

FUTURE - RESIDENTIAL

CONCRETE FLOORS (ON GROUND)

## Vapor retarder

A 6-mil polyethylene or approved vapor retarder with **joints lapped not less than 6 inches** shall be placed between the concrete floor slab and the base course or the prepared subgrade where no base course exists.

# Soil Gas Retarder under Basement Slabs and Slab-On-Grade Floors— Radon Mitigation

## FUTURE - RESIDENTIAL

### CONCRETE FLOORS (ON GROUND) - - RADON MITIGATION

#### Soil-gas-retarder

A minimum 6-mil [or 3-mil cross-laminated] polyethylene or equivalent flexible sheeting material shall be placed on top of the gas-permeable layer prior to casting the slab or placing the floor assembly to serve as a soil-gas-retarder by bridging any cracks that develop in the slab or floor assembly, and to prevent concrete from entering the void spaces in the aggregate base material of sand or clean rock at least 4" thick. The sheeting shall cover the entire floor area with separate sections of sheeting **lapped at least 12 inches**. The sheeting shall fit closely around any pipe, wire or other penetrations of the material. All punctures or tears in the material shall be sealed or covered with additional sheeting.

# One-and-Two Family Dwellings & Townhomes

More Than 6' Above Grade & Less Than 2' AFF

Window May Not Open More Than 4" - - maintain egress





# Multi-Family Dwellings - - Condos, Apartments Etc

More Than 6' Above Grade & Less Than 3' AFF

Window May Not Open More Than 4" - - maintain egress



5/15/2013



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# Trades' Provisions

- Electrical / Mechanical
  - **ALL CSST SHALL BE BONDED** (black or yellow)
    - Corrugated stainless steel tubing (CSST) gas piping systems shall be bonded to the electrical service grounding electrode system. The bonding jumper shall connect to a metallic pipe or fitting between the point of delivery and the first downstream CSST fitting. The bonding jumper shall be not smaller than 6 AWG copper wire or equivalent.

# CSST Bonding



# Field Activities

- WITHOUT AT LEAST A 24 HOUR INSPECTION REQUEST NOTICE WE CANNOT GUARANTEE ANY INSPECTIONS AT YOUR CONVENIENCE!
- **To be implemented July 1, 2013 - -**
- **48 HOUR (two working days) MINIMUM NOTICE IS REQUIRED FOR ALL FRAMING AND FINAL INSPECTIONS!**
- **City staff will coordinate ALL inspection timing!**
- **All inspection requests must be made through the inspection request desk @ 963-3533!**

# Inspections Including Finals For Certificates of Occupancy

- Inspections and review occur by many Divisions' and Departments' personnel.
- **Same day final inspections and closings do not afford adequate time to address deficiencies and subsequent corrections nor adequate time for issuance of Certificates of Occupancy.**
- Plan ahead to allow time for adequate preparation. **A minimum of 48 hours (two working days) is required for final inspection scheduling requests!**

# Final Inspections – Building Division Related

- Prior to calling for final inspection
- Confirm Field Inspection Checklist is Completed
  - Confirm all work is complete
    - Building
    - Plumbing
    - Electrical
    - Mechanical
    - Energy Compliance Certificate From HERS Rater
    - MPE #2 Documentation as applicable
    - FEMA As-Built Documentation as applicable
    - Water meter set

# Final Inspections – Development Engineering Division Related

- Prior to calling for final inspection
  - Confirm all work is complete
    - Site grading, sod and landscaping
      - Established vegetation
      - Drainage Swales
    - Sidewalks and driveways
  - Confirm infrastructure is intact and working
    - Curb boxes, cleanouts, manholes etc
      - Infrastructure needing repair will hold up your C.O.

# Final Inspections – Planning Division Related

- Prior to calling for final inspection
  - Confirm all work is complete
    - Berms
    - Landscaping
    - Trees
    - Shrubs
  - Typically these requirements exist in PUD's and/or along major streets
- Please make the call before you request a final inspection if you are unsure or have questions.



# Final Inspections – Stormwater Division Related

- Prior to calling for final inspection
  - Confirm all work is complete
    - **Don't forget the *required topsoil!***
    - Site grading, sod and landscaping
      - Established vegetation
      - Drainage Swales
    - All erosion control measures removed from the site
  - **Erosion control measures shall be reinstalled after final grading (as applicable) and shall be maintained until the lot is permanently vegetated.**

# Final Inspections and Certificates of Occupancy

- Final Certificate of Occupancy

- Final Certificate of Occupancy may be issued upon confirmation that all construction and zoning codes are compliant, lot is fully stabilized and erosion control features are removed.

## Temporary Certificate of Occupancy

- A temporary Certificate of Occupancy may be offered provided all construction and zoning codes are compliant and all erosion control measures are compliant and maintained in-place. A temporary Certificate of Occupancy is valid for **no more than twenty one days** except during winter months. A temporary Certificate of Occupancy may include **no more than sod, landscaping and infrastructure/site issues**.
  - **Trees, shrubs, berms and other required landscape features are anticipated to be installed at the time of final inspection.**

# Final Inspection Requests

- **Minimum 48 hour (two working days) inspection request notice required**
- Final inspection and closing on the same day often creates difficulties.
- **Same day C.O. issuance may not be accommodated.**
- Please plan ahead!

 **CITY OF Ankeny**  
*bringing it all together*

**CERTIFICATE OF OCCUPANCY & USE**

PURSUANT TO REQUIREMENTS OF THE MUNICIPAL CODE OF THE CITY OF ANKENY, THE PROPERTY IDENTIFIED BELOW MAY BE LEGALLY USED IN THE MANNER DESCRIBED.

**BUILDING ADDRESS:** 1313 MAIN

**LEGAL DESCRIPTION:**

This certificate is issued pursuant to the requirements of the Municipal Code of the City of Ankeny and other applicable ordinances certifying that, at the time of issuance this structure is in compliance with the adopted construction codes and zoning ordinance for the use and work specified in the following permit.

<b>Building Permit Number:</b> BLD2006-00898	<b>Use Classification:</b> Single Family Residential
<b>Type of Work:</b> NEW/REBUILDING	<b>Zoning:</b> Single
<b>Permit Applicant:</b> BUILDER	<b>Type of Construction:</b>
<b>Property Owner:</b>	<b>Design Consultant/Lead:</b>
	<b>Spillage System Provided:</b>
	<b>Spillage System Required:</b>

No change of use may be made at this location unless a new Certificate of Occupancy & Use is granted for such use and no change in this building may be made without first consulting the Community Development Department.

**SPECIAL STIPULATIONS AND CONDITIONS**

Jeff Jucker, Building & Zoning Administrator

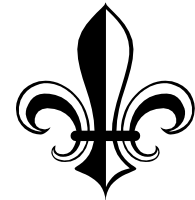
Date:

City of Ankeny Community Development Department - 220 West First Street - Ankeny, IA 50021-1751

# Certificate of Occupancy

- Required prior to occupancy
  - Please allow time for the final inspection and any corrections to be made and re-inspected and confirmed and the C.O. to be processed.
  - **Same day CO issuance may not be accommodated.**

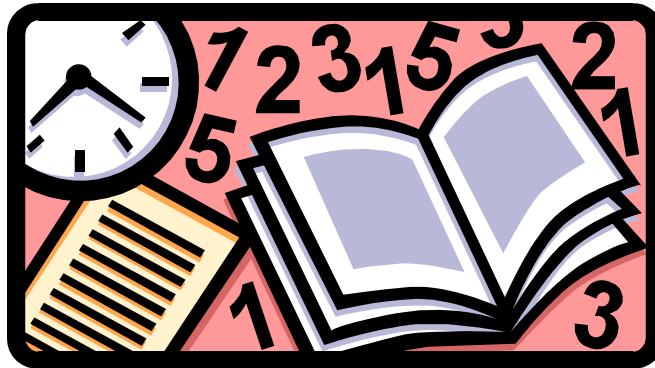
Cooperation, organization and  
communication!



General contractors are responsible  
for their projects and must  
coordinate site and inspection  
activities of all trades!

# HELP US TO HELP YOU!

- Allow time for permit review, inspection scheduling, final inspections and C.O. Issuance!



# HELP US TO HELP YOU!

- Be a good neighbor!
- Cooperation and organization are key elements!





# Questions



# In Closing

- The construction season is again well underway.
- We hope this information, and in some cases gentle reminders, will help us keep things running smoothly.
- Please never hesitate to call - we are always more than happy to make ourselves available for discussion.

... and

*Thank you  
for  
building  
the  
City of Ankeny*